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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/848,754	05/18/2004	Zhizhang Chen	10007794-11	4651

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**HEWLETT-PACKARD COMPANY**  
Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

LEWIS, MONICA

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/848,754

Applicant(s)

CHEN ET AL.

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 41-54 is/are pending in the application.
- 4a) Of the above claim(s) 48-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/18/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to the election filed March 16, 2006.

#### ***Election/Restrictions***

2. Applicant's election without traverse of Group I in the reply filed on 3/16/06 is acknowledged.

#### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: a) 36 (For Example: See Figure 2). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 41 and 43-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Raina et al. (U.S. Patent No. 6,425,791).

In regards to claim 41, Raina et al. ("Raina") discloses the following:

- a) an emitting surface having a first area (For Example: See Figure 8);
- b) a first chamber having substantially parallel sidewalls interfacing to the emitting surface (For Example: See Figure 8);
- c) a second chamber having sidewalls diverging to an opening having a second area larger than the first area (For Example: See Figure 8).

In regards to claim 43, Raina discloses the following:

- a) the first chamber is formed within an adhesion layer (66) (Note: It is well known that silicon dioxide can be utilized as an adhesion layer. For Example: See Baldi et al. (U.S. Patent No. 6,000,980) (Column 8 Line 23) (For Example: See Figure 8).

In regards to claim 44, Raina discloses the following:

- a) the second chamber is formed within a conductive layer (74) (For Example: See Figure 8).

In regards to claim 45, Raina discloses the following:

- a) an integrated circuit (For Example: See Column 1 Lines 39-54).

In regards to claim 46, Raina discloses the following:

- a) a display device (For Example: See Column 1 Line 50).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 42 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Raina et al. (U.S. Patent No. 6,425,791).

In regards to claim 42, Raina fails to disclose the following:

a) a cathode layer disposed on the emitting surface, and sidewalls of the first and second chambers and wherein the emitter has been subjected to an annealing process thereby increasing the emission capability of the emitter.

Finally, the following limitation makes it a product by process claim: a) "the emitter has been subjected to an annealing process thereby increasing the emission capability of the emitter." The MPEP § 2113, states, "Even though product -by[-] process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

A "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re*

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*Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "*product by, all of*" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "*product by process*" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

8. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raina et al. (U.S. Patent No. 6,425,791) in view of Applicant's Prior Art.

In regards to claim 47, Raina fails to disclose the following:

a) a storage device.

However, Applicant's Prior Art ("APA") discloses a storage device (For Example: See Page 1 Lines 14-16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Raina to include a storage device as disclosed in APA because electron emissions are commonly utilized (For Example: See Page 1 Lines 14-16).

Additionally, since Raina and APA are both from the same field of endeavor, the purpose disclosed by APA would have been recognized in the pertinent art of Raina.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization

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where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

ML

April 29, 2006

A handwritten signature in black ink, appearing to be 'Mary Wilczewski', with a stylized, cursive script.

**Mary Wilczewski**  
**Primary Examiner**